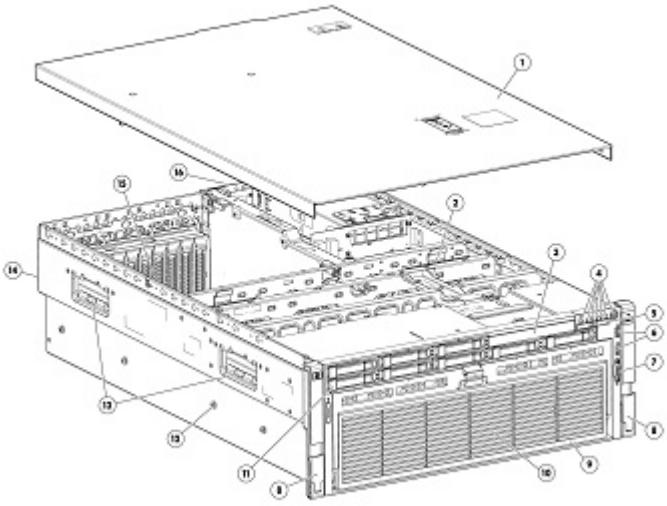
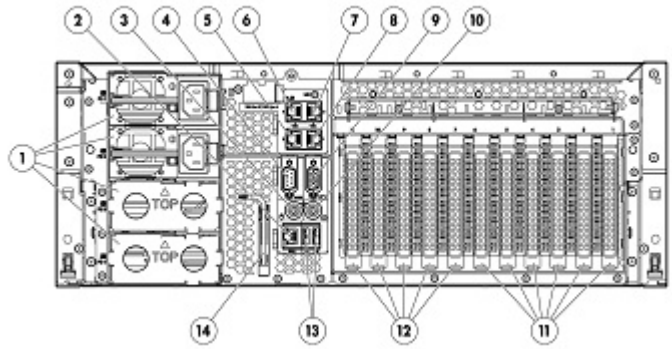
Overview





Front View:

1. Quick Removal Access Panel
2. 4 Hot Plug Redundant Fans Standard on all models
3. Slimline Drive (DVD Drive optional)
4. Front Panel LED Display and Power Button
5. Slide-out Systems Insight Display
6. Two front accessible USB 2.0 ports
7. One front video port
8. Quick release levers for fast server access
9. Front accessible Processor and memory drawer
10. Support for up to four AMD Opteron processors
11. Support for up to 8 Small Form-Factor (SFF) SAS/ Serial ATA (SATA)/Solid State drives
12. Universal Tool-less "Snap In" Sliding Rail Solution
13. Server Lifting Handles
14. 4U (7" Height) Rack Form Factor
15. Up to eleven available PCI Express/PCI-X Internal Expansion Slots

Rear View:

1. Hot Plug Redundant Power supplies (2 or 4 ship depending on the model)
2. Integrated Lights-Out 3 port
3. Mouse port
4. Serial port
5. Gigabit NIC Ports
6. Gigabit NIC Ports
7. Gigabit NIC Ports
8. Gigabit NIC Ports
9. Video port
10. Keyboard port
11. PCI-Express or PCI-X option (slots 1-6)
12. PCI-Express slots (slots 7-11)
13. Two USB ports
14. Service tool

At A Glance

Powered by latest AMD Opteron® 8 and12 core processors, the HP ProLiant DL585 G7 is positioned as the leading price/performance 4P multi-core rack mount server with the expansion capabilities to make it ideal for server virtualization, server consolidation, multi-tiered enterprise application, and corporate infrastructure applications.

- Processors:
  - Eight and Twelve-Core AMD Opteron™ 6100 Series Processors
  - Up to 12MB shared L3 cache
  - Up to 2.4GHz clock speed
- Memory:
  - Up to 512GB of memory

Overview

- 48 slots of registered DDR3 DIMMs

- Storage Controller:
  - Performance Models: HP Smart Array P410i/1G FBWC controller
  - Base Models: HP Smart Array P410i/512MB FBWC controller
- Internal Drive Support:
  - Support for up to 8 hot plug SFF SAS/SATA/SSD drives (one extra SSD internal slot available)
- Network Controller:
  - HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- Expansion Slots:
  - Up to 11 FL/FH I/O slots
  - Standard: 2 PCI-E 2.0 x16, 3 PCI-E 2.0 x8
- Ports:
  - USB: (6) Total USB 2.0 Ports: (2) front; (2) rear; (2) internal
  - Video: One front and one rear video ports
- Redundancy:
  - Redundant hot plug power supplies and fans
- Infrastructure Management:
  - Convenient slide-out Systems Insight Display for quick and easy front view server diagnostics, along with status LEDs, Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU)
  - HP Integrated Lights-Out 3 (iLO 3) management processor simplifies server setup, health monitoring and recovery, power and thermal control, and lights-out remote administration.
  - HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, control and optimize your IT infrastructure through a single, simple management console. Insight Control supports both Windows and Linux-based central management servers.
  - HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. This ultimately enables them to dynamically keep pace with the organization's changing business requirements.
- Operating Systems and Virtualization Software Support for ProLiant Servers:
  - Supports Windows, RHEL, SLES, OEL, VMware, and Citrix XenServer
- Form Factor:
  - Dense form factor - 4U rack models
- Deployment/Serviceability:
  - Tool-less and virtually cable-less internal design
  - Rapid Deployment racking solution (rack rails and cable management)
  - Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement
- Warranty:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
    NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge.
    Additional information regarding worldwide limited warranty and technical support is available at:
    http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html.

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor Two or four of the following depending on Model	**Twelve-Core Processors** AMD Opteron™ 6176 SE processor (12 cores, 2.30GHz, 12M, 105W) AMD Opteron™ 6174 processor (12 cores, 2.20 GHz, 12M, 80W) AMD Opteron™ 6172 processor (12 cores, 2.10GHz, 12M, 80W) AMD Opteron™ 6168 processor (12 cores, 1.90 GHz, 12M, 80W) AMD Opteron™ 6164 HE processor (12 cores, 1.70 GHz, 12M, 65W) **Eight-Core Processors** AMD Opteron™ 6136 processor (8 cores, 2.40GHz, 12M, 80W) NOTE: Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: http://www.amd.com/powernow.
Cache Memory	12MB (1 x 12MB) Level 3 cache
Upgradeability	Upgradeable to quad (4) processors
Chipset	AMD SR5690/SP5100
Memory Protection	Advanced ECC capabilities
Memory	Type: PC3-10600R Registered DDR3 (1333MHz) Standard (Performance Models): 64GB (16x4GB) of PC3-10600 (DDR3-1333) Standard (Base Models): 32GB (8x4GB) of PC3-10600 (DDR3-1333) Maximum: 512GB (16GB + 8GB + 8GB) x16 NOTE: Max memory is based on the maximum capacity of the AMD architecture.
Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter

Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
1	PCI-Express	x8	x16	Full Length/Full Height	
2	PCI-X	64-bit	N/A	Full Length/Full Height	
3	PCI-X	64-bit	N/A	Full Length/Full Height	

4	PCI-Express	x8	x16	Full Length/Full Height	
5	PCI-Express	x8	x16	Full Length/Full Height	
6	PCI-Express	x16	x16	Full Length/Full Height	
7	PCI-Express	x8	x16	Full Length/Full Height	
8	PCI-Express	x8	x16	Full Length/Full Height	
9	PCI-Express	x16	x16	Full Length/Full Height	
10	PCI-Express	x8	x16	Full Length/Full Height	
11	PCI-Express	x16	x16	Full Length/Full Height	

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
1	PCI-Express	x8	x16	Full Length/Full Height	
2	PCI-Express	x8	x16	Full Length/Full Height	
3	PCI-Express	x16	x16	Full Length/Full Height	
4	PCI-Express	x8	x16	Full Length/Full Height	
5	PCI-Express	x8	x16	Full Length/Full Height	
6	PCI-Express	x16	x16	Full Length/Full Height	
7	PCI-Express	x8	x16	Full Length/Full Height	
8	PCI-Express	x8	x16	Full Length/Full Height	
9	PCI-Express	x16	x16	Full Length/Full Height	
10	PCI-Express	x8	x16	Full Length/Full Height	
11	PCI-Express	x16	x16	Full Length/Full Height	

Storage Controller One of the following depending on Model	Performance Models	HP Smart Array P410i/1G FBWC Controller
	Base Models	HP Smart Array P410i/512MB FBWC Controller

Standard Features

Storage Data Protection	The Flash Backed Write Cache (FBWC) increases cache data retention capabilities from two days of existing battery backed write cache (BBWC) to infinite. • Standard on all Base Models • Transportable data protection • Increases overall controller performance		
Storage	Drive Bays	Up to 8 Small Form Factor drive bays total	
	Optical Drives	Slimline DVD Drive Standard on some models - ejectable for security and serviceability	
	Hard Drives	None standard	
	Hard Disk Drive Backplane	Internal SAS backplane supports up to eight SFF hard disk drives	
Maximum Internal Storage	Hot Plug SFF SAS	4.0TB	8 x 500GB
	Hot Plug SFF SATA	4.0TB	8 x 500GB
	Hot Plug SFF SSD	960GB	8 x 120GB
	NOTE: There is an extra internal SSD slot available as well		
Interfaces	Video	1 front, 1 rear	
	Keyboard	1	
	USB 2.0 Ports	6 total: 2 front; 2 rear; 2 internal NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html	
	iLO 3 Remote Management	1	
	Network RJ-45 (Ethernet)	4	
	Serial	1	
	Pointing Device (Mouse)	1	
Graphics	Integrated ATI RN-50 1600x1280x64K 16M color (32 MB DDR1 memory)		
Form Factor	Rack (4U = 7 inches), ships with sliding rails and cable management system Space saving form factor (4U) provides space efficiencies while providing maximum deployment flexibility		
HP Insight Management Control Software	HP Insight Foundation	Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters. HP provides management solutions that are designed to simplify a server's	

	installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: http://www.hp.com/go/foundation. The foundation pack includes: • HP SmartStart • HP Management • HP ProLiant Firmware Maintenance SmartStart version supported (minimum): SmartStart 8.50 http://www.hp.com/servers/smartstart
HP Integrated Lights-Out (iLO)	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO
HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight
HP Insight Dynamics for ProLiant	HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. As a powerfully integrated by design toolkit to accelerate complex technology projects and simplify daily operations that ultimately enable IT Staff personnel to dynamically keep pace with the organizations changing business requirements. It enables them to plan capacity and power continuously, balance across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP StorageWorks Continuous Access software for both the Enterprise Virtual Array and the XP storage array

allowing application environments to be reactivated in minutes with the touch of a button to a remote location.

NOTE: For more information, visit:
http://www.hp.com/go/insightdynamics

Industry Standard Compliance	ACPI 1.0a. Compliant PCI 2.2 Compliant PXE Support WOL Support (with embedded NC371i Multifunction Gigabit Network Adapters) Physical Address Extension (PAE) Support Microsoft® Logo certifications USB 2.0 Support
Intelligent Manageability	HP Systems Insight Manager software SmartStart Redundant ROM Remote Flash ROM Management Agents Integrated Management Log (IML) Automatic Server Recovery-2 (ASR-2) ROM-Based Setup Utility (RBSU) Dynamic Sector Repairing (with Smart Array Controllers) Drive Parameter Tracking (with Smart Array Controllers) Pre-Failure Warranty (covers processors, SAS hard drives and memory) Redundant/adaptive load balancing NIC Support
Availability	The Flash Backed Write Cache (FBWC) increases cache data retention capabilities from two days of existing battery backed write cache (BBWC) to infinite. • Standard on 4P/2P Base Models • Transportable data protection • Up to eight hot-plug SFF SAS Hard Drives • Dual Hot-Plug Redundant Power Supplies • Hot-Plug Redundant Fans (standard) • Fans are 3+1 hot plug redundant and individually removable

Standard Features

Serviceability

- System Insight Display - precisely depicts all major subsystems of the server (PCI I/O, Memory, CPU, Redundant Cooling, Interlock, Thermal) and gives instant visual indication of fault status. Located on top front of server, beneath lid.
- Tool-less, virtually cable-less interior design
  - Tool-less access to interior of server
  - Two ejectable, slimline Media Bay media drives (DVD/CD-RW optional) are removable without the use of tools
  - Front accessible processors and memory
  - PCI Card Guides locks full length PCI cards in place during transit
  - Four individually removable fans connect without cables to the system board
  - Tool-less removal of system board
- Quick Deploy Rails
- Tool-less design "snap in" rail

Security

Power-on password
Keyboard password
Diskette drive control enable/disable
Diskette boot control enable/disable
External USB port enable/disable
Network Server Mode
Serial interface control
Administrator's password
Removable optical drive

Security Trusted Platform Module

The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM

NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.
NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

Server Power Cords

NOTE: If customers require a local power cord, they can check the power cord matrix for the appropriate county specific sku. Please see the following power cord matrix for details: http://www.hp.com/go/powercordmatrix

UPS and PDU Power Cord Matrix

Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the “HP Power Cord Matrix” link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

Standard Features

Power Supply	1200W AC Power Supply NOTE: Two Hot Plug Power Supplies ships standard with 2P Models. Four Hot Plug Power Supplies ship standard with 4P Models.
System Fans	4 Hot plug, redundant fans (individually removable)
Required Cabling	For required cabling information, refer to the HP Web site at: www.hp.com/servers/dl585
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server 2003 R2 Microsoft Windows Server 2008 Hyper-V Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Enterprise Linux (OEL) VMware Citrix XenServer NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: www.hp.com/go/ossupport and our driver download site www.hp.com/support/DL585G7
Rack Airflow Requirements	Rack 10000 G2 series Cabinets The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: • Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). • Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage. NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: www.hp.com/servers/dl585.
Rack Kit	Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

Standard Features

Telco Rack Support

Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions at: www.hp.com/go/rackandpower

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.

HP Enterprise Configurator

The HP eConfigure Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. For additional information please visit: http://www.hp.com/products/configurator

HPC Interconnects

NOTE: High Performance Computing (HPC) interconnect technologies are available for this server under the HP Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand Interconnects: http://www.hp.com/techservers/clusters/ucp/index.html

InfiniBand	PCI-Express adapters

Solutions

Designed for enterprise customers running compute- or I/O intensive database and transaction applications, as well as data centers using virtualization and consolidation to reduce server sprawl, the rack optimized 4-processor HP ProLiant DL585 G7 server delivers maximum performance and high availability for highly complex, business critical applications. Specifically, the HP ProLiant DL585 G7 would be excellent for running the following types of applications:

Typical Usage:

- x86 virtualization and consolidation projects
- Electronic Design Automation (EDA)/Semiconductor
- Financial
- Large database applications
- ERP / CRM
- Petrochemical
- Life Science and Material Science
- Video Rendering

Service and Support

For increased uptime, productivity and ROI - HP Care Pack packaged services for Servers

These days, you need to get the most out of your server investment - you can't afford not to. When you buy HP server products and solutions, it's also a good time to think about what levels of service and support you may need. To help take the worry out of deploying, designing, maintaining, and managing your environment, we've designed a portfolio of service options that are as: flexible, reliable and scalable as your server. Unlike server-only vendors, we take a holistic approach to your entire environment, bridging storage, servers, blades, software and network infrastructures with our HP Care Pack packaged services for Servers.

Protect your business beyond the warranty

When it comes to robustness and reliability, standard warranties on today's computing equipment have matured just as the technologies have matured. Good news on some fronts - but also a source of potential problems and subsequent consequences that come from depending on standard warranties alone. Standard warranty protects against product defects and some causes of downtime - but not the business. By using a standard approach to warranty uplifts, such as HP Care Pack Services, you can reduce downtime risks and be more certain of operational consistency for both mission-critical and standard business computing. Simply put, HP Care Pack Services normalize the warranty of combined products - helping you proactively guard against unplanned downtime.

Extending warranties with HP Care Pack Services

For cost-effective upgrading or extending your standard warranty, HP Care Pack Services offer a suite of standard reactive hardware and software support services that are sold separately, or combined as with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition, with HP Proactive Select we offer an innovative approach to service delivery that gives you the flexibility to acquire the specific proactive services you need today, then add services as your needs evolve. HP Proactive Select offers a broad set of technical or per-event type service options - including server, storage, and network, SAN device, and software, environment, installation and education services. Services that you can mix and match depending on your specific requirements, from preliminary planning and equipment delivery to installation, configuration, integration, and testing, through every level of ongoing support. Our HP Care Pack packaged services for Servers assures help when you need it most. And for many products, post-warranty HP Care Pack Services are available when your original warranty has expired.

HP Server Services: Offering reliability, flexibility and value - just like your storage

HP Server Services offers a full spectrum of customer care, from technology support to complex migrations to complete completely managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education offers flexible, comprehensive training on server networking and server software to help your IT staff get the most out of your investments. And HP Financial solutions extend innovative financing and asset management programs to cost-effective buy, manage and eventually retire your older equipment.

HP Server Services, the trusted business technology experts who manage your technology in action, because when technology works, business works. http://www.hp.com/services/servers, http://www.hp.com/services/storage

NOTE: Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at: http://www.hp.com/go/lookuptool

Recommended HP Care Pack Services for optimal satisfaction with your HP product.

Recommended Services

Hardware Support - 3-Year HP 24x7 6-hour call to repair Care Pack

3-Year HP 24x7 6-hour call to repair Care Pack - This cost-effective service helps you minimize system downtime due to hardware failure. It features a commitment to resolve hardware problems within 6 hours from the time your service call is received. (Please note repair-time restrictions below.)

When you experience system problems, your call is immediately connected to an HP-certified resolution engineer for troubleshooting. If your problem cannot be resolved remotely, an experienced support professional is dispatched to your site to begin hardware repair activities.

Service feature highlights

- Remote monitoring and problem diagnosis and support
- Onsite hardware support
- 6-hour call-to-repair time commitment
- Materials included
- Enhanced parts inventory management
- 24x7 coverage window
- Work to completion
- Escalation management

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6636ENN

Hardware Support - 3 - Years 24x7 24 hour Call-to-Repair

3-Year HP 24x7 24-hour call to repair Care Pack - This cost-effective service helps you minimize system downtime due to hardware failure. It features a commitment to resolve hardware problems within 6 hours from the time your service call is received. (Please note repair-time restrictions below.)

When you experience system problems, your call is immediately connected to an HP-certified resolution engineer for troubleshooting. If your problem cannot be resolved remotely, an experienced support professional is dispatched to your site to begin hardware repair activities.

ProLiant Servers Installation and Startup Service

HP Installation and Startup of HP ProLiant Servers provides for the installation of your new HP ProLiant server and operating system. This will assist you in bringing your new HP ProLiant server and operating system into operation in a timely and professional manner.
Service benefits
This service provides a trained HP service specialist to perform an installation that meets HP quality standards, for:

- Delivery of the service at a mutually scheduled time convenient to your organization
- Availability of an HP service specialist to answer basic questions during the onsite delivery of this service
- Custom installation as detailed in "Delivery specifications" or in a Statement of Work (SOW)
- Verification prior to installation that all service prerequisites are met

Service benefits
This service provides a trained HP service specialist to perform an installation that meets HP quality standards, for:

- Delivery of the service at a mutually scheduled time convenient to your organization
- Availability of an HP service specialist to answer basic questions during the onsite delivery of this service
- Custom installation as detailed in "Delivery specifications" or in a Statement of Work (SOW)
- Verification prior to installation that all service prerequisites are met

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982?7572ENN

Optional HP Care Pack Services that will enhance your HP product experience.

Optional Services

3-Year HP Support Plus 24 Service Care Pack

As an alternative to our recommended support level, for customers who need access to responsive 24x7 hardware and software support plus software updates on HP and selected third party products:

HP Support Plus 24 helps you increase performance and availability with comprehensive, consistent hardware and software services. Working with your IT team, HP Services engineers deliver onsite hardware support and over-the-phone software support around-the-clock 365 days per year. Service coverage encompasses HP products and selected multi-vendor hardware and software.

In addition, this convenient HP Care Pack packaged service makes software updates available to you at substantial savings.

Choose Support Plus 24 when you need to:

- Improve uptime with responsive hardware and software services available anytime
- Cost-effectively obtain expert 24x7 multi-vendor hardware and software support
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP and selected third-party software at a predictable cost
- Take advantage of subscription savings on software updates

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EEE

3 Year HP Proactive 24

As an alternative to our recommended support level, for customers who want enhanced operational effectiveness and proactive problem identification:

HP Proactive 24 Service (P24) integrates hardware and software support to help you improve the stability and operational effectiveness of your IT environment. An HP Account Manager acts as your primary point of contact to ensure that HP meets your support needs effectively.

P24 provides the maximum value when multiple technologies in the environment (e.g. servers, storage, SAN and the network), are all covered. It provides an environment-wide view and consistent support of all of these components which affect stability of your key applications.

Choose P24 when you want to:

- enhance operational effectiveness with proactive problem identification and recommendations from HP
- partner with technical experts who help coordinate support, provide hands-on assistance, and share knowledge with your staff
- rapidly access support and expertise spanning your environment
- obtain personalized services tailored to your business environment and critical success factors
- anticipate necessary change - and execute it correctly the first time
- efficiently manage infrastructure resources to meet your performance objectives

http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-1614ENUC

Hardware Support - 3-Year, 24x7 Same-Business-Day, On-site. 4-Hour response coverage

As an alternative to our recommended support level, for customers who need same day response service level 24x7.

3-Year, 24x7 Same-Business-Day, On-site. 4-Hour response coverage provides high-quality remote assistance and onsite support for
your covered hardware, helping you to improve product uptime. You have the flexibility to choose between different service-level options featuring different response times and coverage windows, as well as between several coverage periods to address your specific service needs.
Service benefits

- Help improve or maintain system uptime
- Convenient onsite support
- Reliable response times

Service feature highlights

- Remote problem diagnosis and support
- Onsite hardware support
- Materials included
- Service-level options with different coverage windows and response times
- Work to completion
- Escalation management
- Access to electronic support information and services
- HP electronic remote monitoring and support solution (for eligible products only)
- Optional Defective Media Retention Service

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE

eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal
The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: http://www.hp.com/support

HP Insight Remote Support software delivers secure remote support for your HP Servers and Storage, 24 X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur.

Models

Base Models

HP ProLiant DL585 G7 6168 server 583105-xx1	Processors	(2) AMD Opteron™ 6168 processor (12 cores, 1.90 GHz, 12M, 80WACP)
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	32GB (8x4GB) of PC3-10600 (DDR3-1333)
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/512MB FBWC Controller
	Hard Drives	None ship standard
	Internal Storage	Up to 4TB of internal storage
	Integrated Lights Out	Integrated Lights-Out 3 (iLO 3) ships standard
	Optical Drive	None ship standard
	Power Supply	Two 1200W Power Supplies standard
	Form Factor	4U Rack

Performance Models

HP ProLiant DL585 G7 6172 server 583108-xx1	Processors	(4) AMD Opteron™ 6172 processor (12 cores, 2.10GHz, 12M, 80W ACP)
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	32GB (8x4GB) of PC3-10600 (DDR3-1333)
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/1G FBWC Controller
	Hard Drives	None ship standard
	Internal Storage	Up to 4TB of internal storage
	Integrated Lights Out	Integrated Lights-Out 3 (iLO 3) ships standard
	Optical Drive	None ship standard
	Power Supply	Four 1200W Power Supplies standard
	Form Factor	4U Rack

HP ProLiant DL585 G7 6174 server 601362-xx1	Processors	(4) AMD Opteron™ 6174 processor (12 cores, 2.20 GHz, 12M, 80W ACP)
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	64GB (16x4GB) of PC3-10600 (DDR3-1333)
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/1G FBWC Controller
	Hard Drives	None ship standard
	Internal Storage	Up to 4TB of internal storage
	Integrated Lights Out	Integrated Lights-Out 3 (iLO 3) ships standard
	Optical Drive	None ship standard
	Power Supply	Four 1200W Power Supplies standard
	Form Factor	4U Rack

Models

HP ProLiant DL585 G7 6176 server 601361-xx1	Processors	(4) AMD Opteron™ 6176 SE processor(12 cores, 2.30GHz, 12M, 105W ACP)
	Cache Memory	12MB (1 x 12MB) L3 cache
	Memory	64GB (16x4GB) of PC3-10600 (DDR3-1333)
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	Embedded HP Smart Array P410i/1G FBWC Controller
	Hard Drives	None ship standard
	Internal Storage	Up to 4TB of internal storage
	Integrated Lights Out	Integrated Lights-Out 3 (iLO 3) ships standard
	Optical Drive	None ship standard
	Power Supply	Four 1200W Power Supplies standard
	Form Factor	4U Rack

Country Code Key	xx = 00	U.S.
	xx = 20	Brazil
	xx = 29	Japan
	xx = 37	AP
	xx = 42	Europe
	xx = AA	PRC

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.
NOTE: FIO indicates that this option is a Factory Installable Option.

Step 1: Base Configuration

HP Models	HP DL585R07 CTO Chassis Svr	590480-B21
	Factory Integrated Models ship with:	
	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter Five standard PCI-express slots HP Smart Array P410i/ Zero Memory Controller Four redundant hot-plug fans SFF SAS/SATA/SSD drive cage HP Integrated Lights-Out 3 (iLO 3) management processor: integrated on system board Rack (4U), 7-inch NOTE: Power supplies need to be selected separately from Step 2 below.	

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors	NOTE: If more than two processors are desired, select xxxxxx-L21 and additional processors would be xxxxxx-B21. 3P configurations are not supported	
	Twelve-Core Processors	
	AMD Opteron Processor Model 6176SE (2.3GHz, 12M cache, 105W ACP) 2P, FIO	601351-L21
	AMD Opteron Processor Model 6174 (2.2GHz, 12M cache, 80W ACP) 2P, FIO	601353-L21
	AMD Opteron Processor Model 6172 (2.1GHz, 12M cache, 80W ACP) 2P, FIO	583109-L21
	AMD Opteron Processor Model 6168 (1.9GHz, 12M cache, 80W ACP) 2P, FIO	583106-L21
	AMD Opteron Processor Model 6164HE (1.7GHz, 12M cache, 65W ACP) 2P, FIO	601357-L21
	Eight-Core processors	
	AMD Opteron Processor Model 6136 (2.4GHz, 12M cache, 80W ACP) 2P, FIO	601355-L21
HP Memory	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21

HP Power Supplies	HP 1200W 12V Hot Plug AC Power Supply NOTE: Option Kit contain optional power supply, an IEC power cable and PDU IEC cables.	500172-B21

Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

HP Storage Controllers	Optional Upgrades	
	1G Flash Backed Write Cache	534562-B21
HP Insight Software	HP Insight Control, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	582765-B21
	HP Insight Control for Linux, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	TC203A

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.

Core Options

NOTE: Some options may not be available for factory integration. Please contact an HP sales representative for additional information.

HP Unique Options	HP DL585 Video Power Cable	576444-B21
HP Processors	NOTE: Processor kits contain two processors each.	
	Twelve-Core Processors	
	AMD Opteron Processor Model 6164HE (1.7GHz, 12M cache, 65W ACP) 2P	601357-B21
	AMD Opteron Processor Model 6168 (1.9GHz, 12M cache, 80W ACP) 2P	583106-B21
	AMD Opteron Processor Model 6172 (2.1GHz, 12M cache, 80W ACP) 2P	583109-B21
	AMD Opteron Processor Model 6174 (2.2GHz, 12M cache, 80W ACP) 2P	601353-B21
	AMD Opteron Processor Model 6176SE (2.3GHz, 12M cache, 105W ACP) 2P	601351-B21
	Eight-Core Processors	
	AMD Opteron Processor Model 6136 (2.4GHz, 12M cache, 115W TDP) 2P	601355-B21
HP Memory	NOTE: DIMM banks are active only when the corresponding processor socket is populated.	
	Registered DIMMs (RDIMMs)	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
	NOTE: Memory must be installed in like-pairs, i.e. two of the same size. NOTE: Memory bus speeds will operate as follows: 2-4 DIMMs at 800MHz; 6 at 667MHz; 8 at 533MHz.	
HP Optical Drives	HP Slim SATA DVD-ROM Optical Drive	481041-B21
	HP Slim SATA DVD-RW Optical Drive	481043-B21
	NOTE: Optical drives are ejectable.	

Core Options

HP Hard Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components. NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
	HP 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507125-B21
	HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512545-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)	
	SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
	HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21
	SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
	HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
	HP 160GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	530888-B21
	SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives	
	HP 250GB 3G SATA 5.4K rpm SFF (2.5-inch) Entry 1yr Warranty Hard Drive	460355-B21
	NOTE: SATA drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)	
	SATA Hot Plug Midline (MDL) Solid State Drives	
	HP 60GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive	572071-B21
	HP 120GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive	572073-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html (Worldwide)	

Core Options

HP Networking	Gigabit Ethernet adapters	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
	HP NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
	10 Gigabit Ethernet adapters NOTE: No more than two10GbE I/O devices are supported in a single ProLiant server. NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.	
	HP NC522SFP Dual Port 10GbE Gigabit Server Adapter	468332-B21
	HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21
	HP NC524SFP Dual Port 10GbE Server Adapter	489892-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.	
HP InfiniBand	HP InfiniBand 4X DDR PCI-E 0 Memory Dual Port HCA	483513-B21
	HP InfiniBand 4X DDR PCI-E Dual Port Host Adapter	409376-B21
HP Power Supplies	NOTE: The HP ProLiant DL585 G7 does an inventory of the system configuration to determine what level of redundancy the power supply configuration supports based on some configuration assumptions. The level of redundancy will be reported during the system power on. For planning purposes you can use the Power Advisor at: www.hp.com/go/hppoweradvisor, which is more accurate to determine the power requirements. Also, there is an RBSU override switch capability that allows the user to override the base setting if the Power Advisor indicates redundancy with their configuration.	
	HP 1200W 12V Hot Plug AC Power Supply	500172-B21
	NOTE: Option Kit contain optional power supply, an IEC power cable and PDU IEC cables.	

Additional Options

HP Insight Software	HP Insight Control	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	452148-B22
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	T9074BAE
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL-bundle Electronic License	TC278AAE
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL-bundle Tracking License	TC275A
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
	HP Insight Control for Linux	
	HP Insight Control for Linux including 1yr 24x7 Support Electronic License	TC213AAE
	HP Insight Control for Linux including 1yr 24x7 Support Single Server License	TC209A
	HP Insight Control for Linux Media Kit	TC208A
	NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately. NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com/go/ic-linux (click on Download button). NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html	
	HP Integrated Lights-Out (iLO) Advanced	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE
	HP Insight Software Media Kit	436222-B21
	NOTE: Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated	

	installer to perform quick and accurate software installation and updates. NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service. NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html	
	HP Insight Control server deployment	
	HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
	HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License	452151-B21
	NOTE: Licenses ship without media. The Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. NOTE: Electronic licenses can be used to purchase multiple licenses with a single activation key, and is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. NOTE: Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service. NOTE: For additional license kits please see the Insight Control QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
HP Security - TPM	HP Trusted Platform Module Option Kit	488069-B21
HP Storage Controllers	SAS Controllers	
	Smart Array P212 Controller	
	HP Smart Array P212/Zero Memory Controller	462828-B21
	HP Smart Array P212/256 MB Controller	462834-B21
	Smart Array P411 Controller	
	HP Smart Array P411/256 MB Controller	462830-B21
	HP Smart Array P411/512 MB with BBWC Controller	462832-B21
	HP Smart Array P411/512MB Flash Backed Write Cache	578229-B21
	HP Smart Array P411/1G Flash Backed Write Cache	572531-B21
	Smart Array P812 Controller	
	HP Smart Array P812/1G Flash Backed Cache Controller	487204-B21
	Optional Upgrades	
	512MB BBWC	462967-B21
	NOTE: Supported on HP Smart Array P411 Controller only.	
	512MB Flash Backed Write Cache	534916-B21
	1G Flash Backed Write Cache	534562-B21
	HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates	516471-B21

Single Server License

NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Smart Array P212 Controller)
http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html (Smart Array P411 Controller)
http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html (Smart Array P812 Controller)
http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html (Smart Array Advanced Pack)

SAS HBA

HP SC08e 6Gb 2-ports Ext PCIe SAS HBA 614988-B21

NOTE: This is a 2 x4 External Port HBA

NOTE: This is only approved for the HP StorageWorks P2000 G3 SAS Modular Smart Array.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18004.www1.hp.com/products/quickspecs/13651_div/13651_div.html (SC08e 6Gb HBA)

SCSI HBA

HP SC11Xe Host Bus Adapter 412911-B21

NOTE: Recommended HBA for SCSI tape drive connect.

NOTE: Please see the following QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA)

NOTE: Please refer to the HBA QuickSpecs for additional information at:
http://www.hp.com/products/hba.

Additional Options

HP Tape Backup	NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP StorageWorks tape backup products see: http://www.hp.com/go/connect.	
	HP StorageWorks DAT 320 USB Tape Drive in 1U USB Rack Kit	AP835A
	HP StorageWorks DAT 320 SAS Internal Tape Drive NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	AJ830A
	HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	EH847A
	HP StorageWorks LTO-4 Ultrium 1760 Internal Tape Drive NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	EH919A
	HP StorageWorks LTO-4 Ultrium 1840 Internal Tape Drive NOTE: For installation into 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	EH860A
	HP StorageWorks LTO-5 Ultrium 3280 Internal Tape Drive NOTE: For installation into 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	EH899A
	HP StorageWorks 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL536A
	HP StorageWorks MSL2024 Tape Library with one LTO-5 Ultrium 3000 SAS Drive NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL537A
	HP StorageWorks MSL4048 Tape Library with one LTO-4 Ultrium 3000 SAS Drive NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL538A
	HP StorageWorks MSL8096 Tape Library with one LTO-5 Ultrium 3000 SAS Drive NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL539A

Additional Options

HP Disk Backup

NOTE: For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk backup products see: http://www.hp.com/go/connect.

HP StorageWorks D2D Backup Systems with Backup Data Deduplication

HP StorageWorks D2D2504i Backup System NOTE: 3.0TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EJ002B
HP StorageWorks D2D4009i Backup System NOTE: 7.5TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EH939A
HP StorageWorks D2D4112fc Backup System NOTE: 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric.	EH993B

HP StorageWorks RDX Removable Disk Backup Systems USB

HP StorageWorks RDX500 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.	AJ934A
HP StorageWorks RDX750 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 750GB of disk capacity per data cartridge.	AW577A

HP StorageWorks Options

StorageWorks Fibre Channel HBA

NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html

Brocade Fibre Channel HBAs

HP StorageWorks 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter	AP767A
HP StorageWorks 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter	AP768A
HP StorageWorks 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter	AP770A
HP StorageWorks 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter	AP769A

Emulex Fibre Channel HBAs

HP StorageWorks 81E 8Gb Single Port PCI-e Fibre Channel Host Bus Adapter	AJ762A
HP StorageWorks 82E 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ763A
HP StorageWorks FC2142SR 4Gb PCIe Host Bus Adapter	A8002A
HP StorageWorks FC2242SR 4Gb PCIe DC Host Bus Adapter	A8003A

QLogic Fibre Channel HBAs

HP StorageWorks 81Q PCI-e Fibre Channel Host Bus Adapter	AK344A
HP StorageWorks 82Q 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ764A
HP StorageWorks FC1142SR 4Gb PCIe Host Bus Adapter	AE311A

Additional Options

	HP StorageWorks FC1242SR 4Gb PCIe DC Host Bus Adapter	AE312A
	StorageWorks SCSI HBA	
	HP U320e SCSI Host Bus Adapter	AH627A
	NOTE: Recommended HBA for MSL SCSI Tape Library connect.	
	StorageWorks Converged Network Adapter	
	HP CN1000E 2P Converged Network Adapter	AW520A
HP Disk Storage Systems	MSA SAN Storage Arrays	
	HP StorageWorks 60 Modular Smart Array	418408-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html	
	HP StorageWorks 70 Modular Smart Array	418800-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html	
	Disk Enclosures	
	HP StorageWorks D2600 Disk Enclosure	AJ940A
	HP StorageWorks D2700 Disk Enclosure	AJ941A
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html (Worldwide)	
HP Uninterruptible Power Systems	HP Rack-mountable UPS	
	HP Rack-Mountable R5500 UPS	
	HP R5500 VA UPS, INTL	AF416A
	HP R5500 VA UPS, NA/JPN	AF426A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html (Worldwide)	
	HP R/T3000 Uninterruptible Power System (UPS)	
	HP R/T3000 UPS, High voltage, NA/JPN	AF453A
	HP R/T3000 UPS, High voltage, detachable inlet cord INTL	AF454A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13417_div/13417_div.html (Worldwide)	
	NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.	
	NOTE: For additional information on sizing your server, please reference: http://www.upssizer.com.	

Additional Options

HP Power Distribution Units	**HP Monitored Power Distribution Unit: Half Rack Version**	
	HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A (NA/JPN)	AF914A
	HP 7.3 kVA S132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF915A
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN)	AF504A
	HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN)	AF506A
	HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL)	AF508A
	HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF510A
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html (Worldwide)	
	Modular Power Distribution Units 1U/0U (Up to 32 outlets)	
	NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
	8.3kVA Model - mPDU, 40A, High (power cord attached) (NA/JPN)	252663-D73
	HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
	HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW)	252663-B24
	NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.	
	NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)	
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu.	
HP Rack Series	**HP Rack 10000 G2 Series** (Carbon/Graphite Metallic)	
	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	

Additional Options

HP Rack Options	**HP Server Console Switches**	
	HP Server console switch 0x2x8	AF616A
	HP Server console switch 0x2x16	AF617A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html (Worldwide)	
	HP Server Console Switch G2 with Virtual Media & CAC	
	0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC	AF618A
	0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC	AF619A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html (Worldwide)	
	HP IP Console Switch G2 with Virtual Media & CAC	
	1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC	AF620A
	2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC	AF621A
	4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC	AF622A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html (Worldwide)	
HP USB and SD Options	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB SD Flash Media Kit NOTE: Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization.	580387-B21
	HP 2GB USB Flash Media Drive Key NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	608447-B21

Additional Options

HP Care Pack Services	Hardware Services On-site Service	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4607E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4608E
	6-Hour Call to Repair, On-site Service 7-Day x 24-Hour Coverage, 3 Years (U.S. Part Number)	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4609E
	Installation & Start-up Services	
	Hardware Installation, Electronic	U4617E
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4618E
	Installation and Startup for Essentials Rapid Deployment Pack, Electronic	U5683E
	Support Plus	
	Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4619E
	Support Plus 24	
	Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4620E
	Onsite HW support 24x7, 4hr response and SuSE O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U6316E
	NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack	

NOTE: Standard memory configurations listed do not apply to "Factory Integrated Models."

HP ProLiant DL585 G7 Models

Memory Configurations

- This server supports DDR3 2GB, 4GB, 8GB, and 16GB memory modules across 48 memory sockets.
- For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

Advanced ECC memory

- Advanced ECC memory is the memory protection mode for this server. In Advanced ECC, the server does not fail because of correctable memory errors. The server provides notification if the level of correctable errors exceeds a pre-defined threshold rate.
- Advanced ECC provides additional protection over standard ECC because it is possible to correct certain memory errors that would otherwise be uncorrectable and result in a server failure.
- Whereas standard ECC can correct single-bit memory errors, Advanced ECC can correct single-bit memory errors and multi-bit memory errors if all failed bits are on the same DRAM device on the memory module.

Population order

- The two tables below represent the memory module population order for one processor. The population order for the other processors is identical. SR denotes Single Rank, DR denotes Dual Rank, and QR denotes Quad Rank.
- All memory modules must follow the population order shown in these two tables for all the processors with the following exception:
- QR memory modules must be installed only in memory sockets 2, 5, 8, and 11, while following the population order for those memory sockets.

Processor memory socket	1	2	3	4	5	6
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	A	I	E	C	K	G
Processor memory channel	A	A	A	B	B	B
Processor memory socket	7	8	9	10	11	12
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	B	I	F	D	L	H
Processor memory channel	C	C	C	D	D	D

Population rules

- When installing memory modules, observe the following population rules:
- Use only HP memory modules listed in this document.
- Advanced ECC is not available if x4 and x8 memory modules are mixed in channels (A and B), (C and D), or both, but standard ECC is still available. Advanced ECC is available if x4 and x8 memory modules are mixed in memory channels (A and C), (B and D), or both.

Memory

While adhering to the memory population rules ("Population rules" - see above), performance can be improved by following the guidelines below:

- Memory modules may be installed one at a time per processor, but installing two at a time per processor provides for additional performance, installing four at a time per processor provides for better performance, and installing equal amounts of memory for all processors provides for best performance.
- Install all memory modules of the same speed on the same processor for best performance.
- Install all memory modules of the same voltage on the same processor for best power.

Memory bus speed
Depending on the quantity and native speed of memory modules installed, memory bus speeds can be 1333 MHz, 1066 MHz, 800 MHz, or 667 MHz. Memory bus speeds can be different for each processor.

To determine memory bus speeds, do the following:
Within RBSU, select the Power Management Options menu > Advanced Power Management Options menu > Maximum Memory Bus Frequency menu.

Memory modules per channel	QR	SR or DR	Memory module native speed	Memory bus speed (standard-voltage memory module	Memory bus speed (low-voltage memory module)
1		1	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1333 MHz	1333 MHz
1	1		QR 1066 MHz	1066 MHz	1066 MHz
2		2	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1333 MHz	1333 MHz
2	1	1	SR 1333 MHz DR 1333 MHz DR 1066 MHz QR 1066 MHz	800 MHz	800 MHz
3		3 SR	SR 1333 MHz	1066 MHz	1066 MHz
3		3 DR	DR 1333 MHz DR 1066 MHz	1066 MHz	800 MHz
3		3 mixed	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1066 MHz	800 MHz
3	1	2	SR 1333 MHz DR 1333 MHz DR 1066 MHz QR 1066 MHz	800 MHz	667 MHz

Select one of the following menu options:

- Auto (default) - The memory bus speed is set to what is shown in the following table. If the native speed of the installed memory module is slower than the memory bus speed, the memory bus speed is set to the memory module native speed
- 800 MHz-The memory bus speed is set to 800 MHz regardless of the quantity of memory modules installed, unless the table above reflects a slower memory bus speed.
  NOTE: There may be more than one memory bus speed menu option.
  NOTE: LVDIMM support is dependent on the ROM version

Memory Installation Example

These memory installation example shows the memory sockets associated with the first processor only. This can be applied toward the memory sockets associated with the other processor also.

4 RDIMMs per processor

- Standard memory: 4x4GB RDIMMs (16GB per processor)
- Optional memory: Adding 8x8GB RDIMMs to standard memory (80GB per processor)
- Maximum memory: Replacing standard memory with 4x16GB QR RDIMMs and 8x8GB DR RDIMMs (maximum of 128GB per processor)

Processor memory socket	1	2	3	4	5	6
Standard Memory	4GB			4GB		
Optional Memory	4GB	8GB	8GB	4GB	8GB	8GB
Maximum Memory	8GB	16GB	8GB	8GB	16GB	8GB

Processor memory socket	7	8	9	10	11	12
Standard Memory	4GB			4GB		
Optional Memory	4GB	8GB	8GB	4GB	8GB	8GB
Maximum Memory	8GB	16GB	8GB	8GB	16GB	8GB

The following memory options are available from HP:

Memory

NOTE: DIMM banks are active only when the corresponding processor socket is populated.

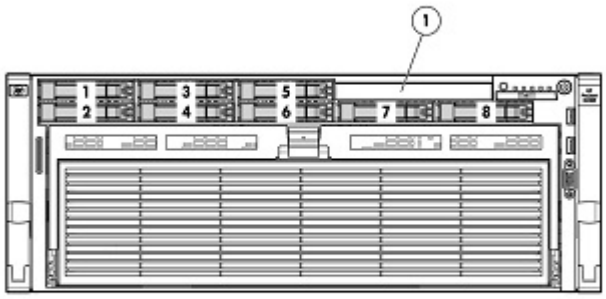
Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21

NOTE: Memory must be installed in like-pairs, i.e. two of the same size.

NOTE: Memory bus speeds will operate as follows: 2-4 DIMMs at 800MHz; 6 at 667MHz; 8 at 533MHz.

1-8 Eight SFF SAS hot plug hard drive bays



Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
Slimline DVD-ROM drive	Up to 1	1	Integrated SATA
HP Slim SATA DVD RW Optical Drive	Up to 1	1	Integrated SATA

Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K DP 146GB 6G SAS 15K DP 146GB 6G SAS 10K DP 72GB 6G SAS 15K DP	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P812/512 BBWC Controller

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

Storage

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 7.2K DP	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P812/512 BBWC Controller

SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K 120GB 1.5G SATA 5.4K	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P812/512 BBWC Controller

SATA Hot Plug Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD 120GB 3.0G SATA SSD	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P812/512 BBWC Controller

Storage

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
60 Modular Smart Array	Up to 8	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller
70 Modular Smart Array	Up to 4	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller
D2600 Disk Enclosure	Up to 8	External	HP Smart Array P411/256MB BBWC Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller
D2700 Disk Enclosure	Up to 4	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

Maximum Storage Capacity - (External Enclosures Attached)

Internal	4TB (8 x 500GB SFF SAS/SATA Drives)
External	960TB (80 MSA60 enclosures x 12 drive bays each x 1TB SATA Drives)

Tape and Disk-Based Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media, including the internal fitting models, see: http://www.hp.com/go/tape. For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk and tape backup products see: http://www.hp.com/go/connect.

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21
HP StorageWorks USB Tape Drives DAT 40 DAT 72 DAT 160	External	USB 2.0 Port	N/A

Storage

DAT 320
1U USB Rack-Mount Kit

HP StorageWorks SAS Tape Drives DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/Zero Memory Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21
HP StorageWorks SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Host Bus Adapter NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21
HP StorageWorks SCSI Tape Libraries, External MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	AH627A
HP StorageWorks SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/Zero Memory Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21
HP StorageWorks Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.	N/A
HP StorageWorks USB RDX Removable Disk Backup System RDX160 RDX320 RDX500	External	USB 2.0 Port	N/A

Storage

RDX750

HP StorageWorks D2D Backup Systems, iSCSI D2D2503i D2D4004i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	N/A
HP StorageWorks D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/go/connect	N/A

Power Specifications

HP 1200W CS HE Power Supply Kit							
Part Number	500172-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	9.1	5.9
Maximum Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%)	86	87	89	89	89	89	89
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

System Unit	**Dimensions** (H x W x D) (with bezel)	6.94" x 19.0" x 27.55" (17.6cm x 48.3cm x 70.0cm)	
	Weight (approximate)	Maximum (all hard drives, power supplies, DIMMs and processors installed)	100.0 lb (45.4 kg)
		Minimum (one hard drive, two power supplies, four DIMMs and two processors installed)	66.0 lb (30.0 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 - 127 VAC, 200 - 240 VAC
		Rated Input Current	12 A (at 100 VAC), 8 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	1161 W (at 100 VAC), 1598 W (at 240 VAC)
	BTU Rating	Maximum	3960 BTU/hr (at 100 VAC), 5450 BTU/hr (at 200 VAC)
	Power Specifications	NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor • Click on the system of interest. Example: DL585 G7 • Follow the instructions of the next screens	
	Power Supply Output (per power supply)	Rated Steady-State Power	910 W (low line), 1300 W (high line)
		Maximum Peak Power	910 W (low line), 1300 W (high line)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

	Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
		Idle	
		L WAd	6.8 B (with PCI-E)
		L pAm	NA dBA
		Operating	
		L WAd	6.8 B (with PCI-E)
		L pAm	NA dBA
	Emissions Classification (EMC)	FCC Rating	Class A
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
		NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	
Integrated Lights-Out 3 (iLO 3) integrated on system board	Architecture	PCI Express based health and remote management ASIC	
	Processor	PCI Express RISC processor core running at 250MHz	
	Upgradeability	Option firmware upgradeable via Flash ROM.	
	Interfaces	One Ethernet Sideband connection (10/100/1000 Mb/s)	
		One Ethernet network connection (10/100Mb/s)	
	Memory	128-MB RAM with ECC	
	Operating System Support	Microsoft Windows 2008 R2	
		Microsoft Windows 2008 (32 bit and 64 bit)	
		Microsoft Windows Server 2008 Standard Edition (32bit and 64bit)	
		Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit)	
		Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Extended Systems Standard Edition, Enterprise Edition	
		Red Hat Enterprise Linux 5.4 (32 bit and 64 bit)	
		SUSE LINUX Enterprise Server 11 (32bit and 64bit)	
		SUSE LINUX Enterprise Server 10 (32bit and 64bit)	
		VMware ESX 4.0	

		VMware ESX 3.5.0
	Client System Support	Microsoft Windows 7
		Microsoft Windows XP Professional Edition
		Microsoft Windows Vista Business and Ultimate Editions
		Red Hat Enterprise Desktop 5.00
		SUSE Linux Enterprise Desktop 11
		SUSE Linux Enterprise Desktop 10
	Client Browser Support	Microsoft Internet Explorer 8
		Microsoft Internet Explorer 7
		Microsoft Internet Explorer 6
		Firefox 3.5 (on supported Windows and Linux systems)
		Firefox 3.0 (on supported Windows and Linux systems)
	Command Line Support	Secure Shell and serial port access
		Secure Socket Layer
		Secure Shell version 2
	Security	Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface
		AES encryption of video
		RC4 encryption of video
	Directory Support Services	Active Directory v1.0 (Windows 2003)
	Driver Support	HP ProLiant iLO3 Management Controller Driver Package
	Management protocols supported	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML
Smart Array P410i Controller	Disk Drive and Enclosure Interface	6Gb/s SAS (Serial Attached SCSI)
	SAS Connectors	2 internal (Mini-SAS) x8 wide port connectors
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth
	Server Interface	x8 5G PCIe 2.0 provides 4GB/s maximum bandwidth
	SAS Speed	x8 6Gb/s SAS provides 4.8GB/s maximum bandwidth
	Cache Memory	40-bit 256MB ECC protected cache (72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC module upgrades available); transportable with battery-backed or flash upgrade
	Logical Drives Supported	Up to 64 logical drives
	Maximum Logical Drive Capacity	Greater than 2TB
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) NOTE: RAID 6, 6+0 can be enabled with either Minimum of 256 MB cache, Battery kit and Smart Array Advanced Pack

		License key option upgrades Minimum of 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades RAID 5, 5+0 (Distributed Data Guarding) NOTE: The 256 MB cache is required to enable RAID 5, 5+0 support of the Smart Array P410i RAID 1+0 (Striping & Mirroring) RAID 0 (Striping	
HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter	Network Interface	10/100/1000-T	
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 802.3ad 1000Base-TX IEEE 802.1p 100Base-TX IEEE 802.1q 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Controller	Qlogic/NetXen NX3031	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4, or 5 UTP; up to 328 ft (100 m)
		10/100/1000 Base-TX	Category 5 UTP up to 328 ft (100 m)
Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.	

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.